

**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Shaohua YU

Appln. No.: unknown

Confirmation No. unknown

Group Art Unit: unknown

Filed: March 13, 2001

Examiner: unknown

For: DATA TRANSMISSION APPARATUS AND METHOD FOR TRANSMITTING  
DATA BETWEEN PHYSICAL LAYER SIDE DEVICE AND NETWORK LAYER  
DEVICE

**PRELIMINARY AMENDMENT**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Prior to calculation of the filing fee and examination, please amend the above-identified application as follows:

**IN THE SPECIFICATION:**

Amend the specification by inserting before the first line the sentence:

--This is a Continuation-in-Part of Application No. PCT/CN00/00195 filed July 13, 2000,  
the disclosure of which is incorporated herein by reference.--

**IN THE CLAIMS:**

**Please enter the following amended claims:**

7. (Amended) The data transmission apparatus according to claim 3, further comprising a self-synchronizing scrambling means for performing  $X^{43}+1$  scrambling, said scrambling means

## PRELIMINARY AMENDMENT

includes a XOR gate and a 43-bit shift register, and the output bits is exclusive-ored with the raw input data bits to produce the transmitted bits.

16. (Amended) The data transmission apparatus according to claim 3, wherein the end flag of a previous frame is the start flag of a subsequent frame next to said previous frame.

17. (Amended) The data transmission apparatus according to claim 3, further comprising a packet size processing means with a preset minimum packet size (mPS) and a maximum packet size (MPS), and if a input packet is longer than the MPS or shorter than the mPS, generating a error indication.

18. (Amended) The data transmission apparatus according to claim 3, further comprising a line side packet loopback means to loopback the first type of frames extracted from the second frames into the first FIFO for test purpose.

19. (Amended) The data transmission apparatus according to claim 1, wherein said physical layer is one of SDH/SONET, simplified SDH/SONET, pseudo-synchronous digital hierarchy, and WDM.

20. (Amended) The data transmission apparatus according to claim 1, wherein said data packets from the network layer are Ipv4, Ipv6, IS-IS, PPP packets, or MPEG data stream, each corresponding to a predetermined SAPI value, respectively, and said first type of frames are LAPS frames, and the second type of frames are SDH/SONET-like frames.

## PRELIMINARY AMENDMENT

33. (Amended) The data transmission apparatus according to claim 27, further comprising a descrambling means for performing  $X^{43}+1$  descrambling, said de-scrambling means includes a XOR gate and a 43-bit shift register, and the output bits is exclusive-ored with the input scrambled data bits to produce the unscrambled bits.

43. (Amended) The data transmission apparatus according to claim 25, wherein said physics layer is one of SDH/SONET, simplified SDH/SONET, pseudo-SDH, and WDM.

44. (Amendment) The data transmission apparatus according to claim 25, wherein said first type of frames are LAPS frames, and the second type of frames are SDH/SONET-like frames, and said extracted data packets therefrom are Ipv4, Ipv6, IS-IS, PPP packets, or MPEG data stream.

**Cancel claims 47 and 50 without prejudice.**

60. (Amended) The data transmission method according to claim 56, further comprising a self-synchronizing scrambling step for performing  $X^{43}+1$  scrambling on the transmitted first type of frames.

67. (Amended) The data transmission method according to claim 54, wherein said physics layer is one of SDH/SONET, simplified SDH/SONET, pseudo-synchronous digital hierarchy, and WDM.

## PRELIMINARY AMENDMENT

68. (Amended) The data transmission method according to claim 54, wherein said data packets from network layer are Ipv4, Ipv6, IS-IS, PPP packets, or MPEG data stream, each corresponding to a predetermined SAPI value, respectively, and said first type of frames are LAPS frames, and the second type of frames are SDH/SONET-like frames.

79. (Amended) The data transmission method according to claim 73, further comprising a descrambling step for performing  $X^{43}+1$  descrambling to produce the unscrambled bits.

86. (Amended) The data transmission method according to claim 71, wherein said physics layer is one of SDH/SONET, simplified SDH/SONET, pseudo-synchronous digital hierarchy, and WDM.

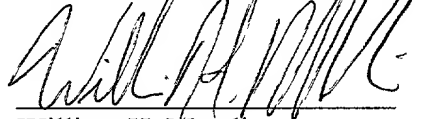
87. (Amended) The data transmission method according to claim 71, wherein said first type of frames are LAPS frames, and the second type of frames are SDH/SONET-like frames, and said extracted data packets therefrom are Ipv4, Ipv6, IS-IS, PPP packets, or MPEG data stream.

PRELIMINARY AMENDMENT

REMARKS

Entry and consideration of this Amendment is respectfully requested.

Respectfully submitted,



William H. Mandir

Registration No. 32,156

SUGHRUE, MION, ZINN,  
MACPEAK & SEAS, PLLC  
2100 Pennsylvania Avenue, N.W.  
Washington, D.C. 20037-3213  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

Date: February 13, 2001

## PRELIMINARY AMENDMENT

### APPENDIX

#### VERSION WITH MARKINGS TO SHOW CHANGES MADE

##### IN THE CLAIMS:

**The claims are amended as follows:**

7. (Amended) The data transmission apparatus according to claim 3 [or 6], further comprising a self-synchronizing scrambling means for performing  $X^{43}+1$  scrambling, said scrambling means includes a XOR gate and a 43-bit shift register, and the output bits is exclusive-ored with the raw input data bits to produce the transmitted bits.

16. (Amended) The data transmission apparatus according to claim 3 [or 6], wherein the end flag of a previous frame is the start flag of a subsequent frame next to said previous frame.

17. (Amended) The data transmission apparatus according to claim 3 [or 6], further comprising a packet size processing means with a preset minimum packet size (mPS) and a maximum packet size (MPS), and if a input packet is longer than the MPS or shorter than the mPS, generating a error indication.

18. (Amended) The data transmission apparatus according to claim 3 [or 6], further comprising a line side packet loopback means to loopback the first type of frames extracted from the second frames into the first FIFO for test purpose.

## PRELIMINARY AMENDMENT

19. (Amended) The data transmission apparatus according to claim 1 [any one of the preceding claims], wherein said [physics] physical layer is one of SDH/SONET, simplified SDH/SONET, pseudo-synchronous digital hierarchy, and WDM.

20. (Amended) The data transmission apparatus according to claim 1 [any one of the preceding claims] , wherein said data packets from the network layer are Ipv4, Ipv6, IS-IS, PPP packets, or MPEG data stream, each corresponding to a predetermined SAPI value, respectively, and said first type of frames are LAPS frames, and the second type of frames are SDH/SONET-like frames.

33. (Amended) The data transmission apparatus according to claim 27 [any one of claims 27, 29, 31, and 32 ], further comprising a descrambling means for performing  $X^{43}+1$  descrambling, said de-scrambling means includes a XOR gate and a 43-bit shift register, and the output bits is exclusive-ored with the input scrambled data bits to produce the unscrambled bits.

43. (Amended) The data transmission apparatus according to claim 25 [any one of the claims 25-42], wherein said physics layer is one of SDH/SONET, simplified SDH/SONET, pseudo-SDH, and WDM.

44. (Amendment) The data transmission apparatus according to claim 25 [any one of the claims 25-43], wherein said first type of frames are LAPS frames, and the second type of frames are SDH/SONET-like frames, and said extracted data packets therefrom are Ipv4, Ipv6, IS-IS, PPP packets, or MPEG data stream.

## PRELIMINARY AMENDMENT

**Claims 47 and 50 are canceled.**

60. (Amended) The data transmission method according to claim 56 [or 59], further comprising a self-synchronizing scrambling step for performing  $X^{43}+1$  scrambling on the transmitted first type of frames.

67. (Amended) The data transmission method according to claim 54 [any one of claims 54-66], wherein said physics layer is one of SDH/SONET, simplified SDH/SONET, pseudo-synchronous digital hierarchy, and WDM.

68. (Amended) The data transmission method according to claim 54 [any one of claims 54-67], wherein said data packets from network layer are Ipv4, Ipv6, IS-IS, PPP packets, or MPEG data stream, each corresponding to a predetermined SAPI value, respectively, and said first type of frames are LAPS frames, and the second type of frames are SDH/SONET-like frames.

79. (Amended) The data transmission method according to claim 73 [any one of claims 73, 75, 77, and 78], further comprising a descrambling step for performing  $X^{43}+1$  descrambling to produce the unscrambled bits.

86. (Amended) The data transmission method according to claim 71 [any one of the claims 71-85], wherein said physics layer is one of SDH/SONET, simplified SDH/SONET, pseudo-synchronous digital hierarchy, and WDM.

87. (Amended) The data transmission method according to claim 71 [any one of the claims 71-86], wherein said first type of frames are LAPS frames, and the second type of frames are



## PRELIMINARY AMENDMENT

SDH/SONET-like frames, and said extracted data packets therefrom are Ipv4, Ipv6, IS-IS, PPP packets, or MPEG data stream.